Voluntary Cleanup and Redevelopment Act Application Guide

Final

August 2002

TABLE OF CONTENTS

LIST OF ACRONYMS

ARM – Administrative Rules of Montana
BAT – best available technology economically achievable
BCT – best conventional pollutant control technology
BMP – best management practices
BPT – best practicable control technology
BTCA – best technology currently available
CECRA – Comprehensive Environmental Cleanup and Responsibility Act
CFR – Code of Federal Regulations
COPC – contaminant of potential concern
DAF – dilution attenuation factor
DEQ – Montana Department of Environmental Quality
DOE – U.S. Department of Energy
EPA – U.S. Environmental Protection Agency
ERCL – environmental requirement, criteria, or limitation
HWIR – Hazardous Waste Identification Rule
LDR – Land Disposal Restriction
MCA – Montana Code Annotated
MCL – federal maximum contaminant level
MPDES – Montana Pollutant Discharge Elimination System
MT - Montana
NPDES – National Pollutant Discharge Elimination System
O&M – operation and maintenance
PRG – Preliminary Remediation Goal
RAGS – Risk Assessment Guidance for Superfund
RBCA – Risk-Based Corrective Action
RBSL – Risk-Based Screening Level
RCRA – Resource Conservation and Recovery Act
SCEM – site-conceptual exposure model
SIP – State Implementation Plan
SMCL – federal secondary maximum contaminant level
SSL – Soil Screening Level
UST – underground storage tank
VCP – voluntary cleanup plan
VCRA – Voluntary Cleanup and Redevelopment Act
WA - Washington
WQB-7 – Circular WQB-7 Montana Numeric Water Quality Standards

PURPOSE

This guide is prepared by the Montana Department of Environmental Quality (DEQ) to assist potential applicants in meeting the requirements outlined in the Voluntary Cleanup and Redevelopment Act (VCRA) codified in §§ 75-10-730 through 738, Montana Code Annotated (MCA). This Act is part of Montana's state Superfund law, the Comprehensive Environmental Cleanup and Responsibility Act (CECRA) contained in §§ 75-10-701 through 752, MCA. As defined in § 75-10-731, MCA, the purposes of VCRA are to provide for the protection of the public health, welfare, and safety and of the environment and to foster the cleanup, transfer, reuse, or redevelopment of facilities where releases or threatened releases of hazardous or deleterious substances exist. VCRA is further intended to permit and encourage voluntary cleanup of facilities where releases or threatened releases of hazardous or deleterious substances exist by providing interested persons with a method of determining what the cleanup responsibilities will be for reuse or redevelopment of existing facilities. VCRA is meant to encourage and facilitate prompt cleanup activities, eliminate impediments to the sale or redevelopment of facilities where releases or threatened releases of hazardous or deleterious substances exist, and minimize administrative processes and costs. Figure 1 is a flowchart outlining the VCRA process.

This guide identifies the requirements of VCRA and provides a suggested format for voluntary cleanup plans (VCPs). The primary target audience for this guide is the qualified environmental professional who is preparing the VCP. However, the guide is also designed to provide information to all applicants or potential applicants regarding the VCRA process. The sections of the guide that follow are meant to represent sections of the VCP. VCPs that follow this format are more likely to contain the information necessary for DEQ to determine a VCP is complete under VCRA. DEQ intends that this guide be used to facilitate an applicant's preparation of a VCP and to facilitate DEQ's review of the VCP. This guide is also available on DEQ's website at www.deq.state.mt.us/rem/hwc. Adherence to the requirements outlined in VCRA is mandatory; however, adherence to this guide is not. A VCP must include the information specified in § 75-10-734, MCA, and be adequate and accurate for DEQ to consider it complete. Applicants must provide enough information in sufficient detail for DEQ to make a completeness determination. The type and amount of information provided in a VCP is facility-specific. DEQ recognizes that certain types of information may not be relevant or essential to a particular facility. However, where VCRA specifies legal requirements of a VCP, those requirements must be met for the application to be complete. If certain information is not applicable to the facility, the applicant may provide an explanation as to why specifically required information is not applicable. DEQ encourages the applicant to consult with DEQ when questions arise about the type and level of detail required before submitting the VCP to DEQ for review.

COVER LETTER

The applicant should begin by providing the following general information in a cover letter:

- Name and address of the applicant,
- Name and address of the facility owner(s),
- Name, address, and telephone number of the contact person,
- Facility name and location,
- In general, the type and source of contamination,
- An indication of whether the VCP addresses the entire facility or a portion of the facility,
- An indication of whether the facility is on the CECRA Priority List, and
- The anticipated length of time needed to complete the cleanup (i.e., less than two years or two to five years).

1.0 INTRODUCTION

This section of the VCP should include the facility name, general location, and the name of the VCRA applicant. It should also include a statement as to whether the VCP addresses the entire facility or a portion of the facility. This section should also include an indication that the VCP is designed to meet the requirements of VCRA, §§ 75-10-730 through 738, MCA.

2.0 ELIGIBILITY ASSESSMENT

This section of the VCP should include an evaluation of each of the criteria found in § 75-10-732(1), MCA, with a statement regarding whether the facility meets any of the criteria listed below that make it ineligible under VCRA.

The following is a discussion of what types of facilities are appropriate for VCRA. Section 75-10-732(1), MCA, provides that a facility where there has been a release or threatened release of a hazardous or deleterious substance that may present an imminent and substantial endangerment to the public health, safety, or welfare or the environment may be eligible for voluntary cleanup procedures under VCRA.

Imminent and Substantial Endangerment

Section 75-10-701(19), MCA, of CECRA defines "release." DEQ interprets "imminent and substantial endangerment to public health, safety, or welfare or the environment" to mean contaminant concentrations in the environment exist or have the potential to exist above risk-based screening levels. DEQ-approved generic screening levels are provided in Section 5.2 of this guide. Facilities with contamination below these generic screening levels do not require further evaluation or remediation. For facilities that have never had contamination above generic screening levels that are not on the CECRA Priority List, DEQ may, upon written request, provide a comfort letter indicating that, based on available information, DEQ does not believe the facility warrants remediation. DEQ may provide a closure letter and delist facilities that are on the CECRA Priority List but are found to have never had contamination above generic

screening levels. Written justification for delisting must be submitted to DEQ and the requirements of the Administrative Rules of Montana (ARM) 17.55.114 must be met.

Eligibility Criteria

Section 75-10-732(1), MCA, specifies the types of facilities that are not eligible to be addressed under VCRA. A facility as described above may be eligible for voluntary cleanup procedures under VCRA, except for facilities that meet one of the following criteria at the time of application:

(a) a facility that is listed or proposed for listing on the national priorities list pursuant to 42 U.S.C. 9601, et seq.;
(b) a facility for which an order has been issued or consent decree has been entered into pursuant to CECRA;
(c) a facility that is the subject of an agency order or an action filed in district court by any state agency that addresses the release or threatened release of a hazardous or deleterious substance; or
(d) a facility where the release or threatened release of a hazardous or deleterious substance is regulated by the Montana Hazardous Waste Act and regulations under that act; or
(e) a facility that is the subject of pending action under this part because the facility has been issued a notice commencing a specified period of negotiations on an administrative order on consent.

Exceptions

As indicated in § 75-10-732, MCA, DEQ may agree to accept and may approve an application for a VCP for a facility that meets criteria (b) through (e); however, DEQ would have to have substantial justification for doing so. In addition, DEQ may determine that a facility that is potentially eligible for voluntary cleanup exhibits complexities regarding protection of public health, safety, and welfare and the environment and that the complexities should be addressed under an administrative order or consent decree pursuant to this part. If a potential applicant disagrees with DEQ's decision that a facility that meets one of the criteria (b) through (e) and is ineligible for VCRA, the applicant may appeal to the Board of Environmental Review as specified in this section of VCRA. Facilities that meet criteria (a) are not eligible to be addressed under VCRA and this decision may not be appealed.

VCRA Facilities

Types of facilities that are appropriate for VCRA are those that can be remediated within 60 months, excluding operation and maintenance (O&M) (§ 75-10-736(5), MCA). This typically excludes facilities with extensive groundwater contamination. However, it is possible for soil contamination to be addressed under VCRA as a portion of a facility, leaving groundwater contamination to be addressed in some other fashion. All facilities where cleanup has occurred outside of a legal order, consent decree or DEQ "proper and expeditious" request must go through the VCRA process to obtain closure (and delisting) from DEQ. In addition, facilities that require facility-specific risk analysis (as opposed to comparison to generic screening levels provided in Section 5.2) to determine that cleanup is not necessary must also go through the

VCRA process to ensure adequate public participation. Facilities at which no further remedial actions are necessary (including institutional controls and O&M) to meet the requirements of § 75-10-721, MCA, (discussed in detail in Section 5.3) because cleanup has already been conducted or because facility-specific risk analysis so indicates, require a "no further action" VCP. A "no further action" VCP must meet all the requirements of VCRA just as a VCP requiring action; however, some requirements may not be as extensive (e.g., alternatives analysis).

DEQ will maintain a registry of VCRA facilities. This registry will include facilities for which a VCP has been submitted. In addition the registry will include facilities for which DEQ has received a written indication of an applicant's intent to conduct a voluntary cleanup under VCRA. The registry will be available to the public upon request and on DEQ's website at www.deq.state.mt.us/rem/hwc.

Voluntary Action to Preclude Remedial Action by DEQ

Section 75-10-737, MCA, provides that if a party has elected to undertake an approved voluntary cleanup and is diligently proceeding to implement the VCP, DEQ may not, except as provided in § 75-10-712, MCA, take remedial action under § 75-10-711, MCA, with regard to those releases or threatened releases of hazardous or deleterious substances that are addressed by the approved VCP.

3.0 GENERAL VCP INFORMATION

This section of the VCP should describe the components of § 75-10-733, MCA, and indicate where these components are located in the VCP. In addition, this section should address reimbursement of remedial action costs and whether the VCP addresses only a portion of the facility.

3.1 VCP SUBMITTAL

As stated in § 75-10-733(1), MCA, any person may submit an application for the approval of a VCP to DEQ under the provisions of VCRA for any eligible facility with a release or threatened release of a hazardous or deleterious substance, regardless of whether the facility is on the CECRA Priority List. The statutory exceptions are discussed in Section 2.0. As stated in § 75-10-736(13), MCA, if a person who would otherwise not be a liable person under § 75-10-715(1), MCA, elects to undertake a VCP, the person may not become a liable person under § 75-10-715(1), MCA, by undertaking a voluntary cleanup if the person materially complies with the VCP approved by DEQ pursuant to VCRA. However, § 75-10-736(14), MCA, indicates that immunity from liability under this section does not apply to a release that is caused by conduct that is negligent or grossly negligent or that constitutes intentional misconduct. It is helpful for the applicant to provide three copies of the VCP to DEQ.

3.2 VCP PREPARATION

Section 75-10-734(1), MCA, states that DEQ may only accept VCPs under §§ 75-10-730 through 75-10-738, MCA, that are prepared by a qualified environmental professional. A qualified environmental professional is a person with education, training, and experience in preparing environmental studies and assessments. This section of the VCP should include information about who is preparing the VCP and reference an appendix that includes a statement of qualifications or resume for the environmental professional. Typically, applicants hire an environmental consultant to prepare the VCP and may have the same consultant conduct the cleanup. Some applicants may have staff environmental professionals who are qualified to prepare a VCP while others may have staff available to operate the equipment required to conduct the cleanup.

3.3 VCP COMPONENTS

Section 75-10-733(2), MCA, states that a VCP must include the following components.

(a) An environmental assessment of the facility that includes the information required in § 75-10-734, MCA, is described in detail in Section 4.0 of this guide.
(b) A remediation proposal that includes the information required in § 75-10-734, MCA, and that meets the requirements of § 75-10-721, MCA, is described in detail in Section 5.0 of this guide.
(c) The written consent of current owners of the facility or property to both the implementation of the VCP and access to the facility by the applicant and its agents and DEQ. The access agreement should identify the specific VCP (i.e., title and date) for which consent is granted. An example of a consent agreement is provided as Attachment A of this guide.

3.4 REIMBURSEMENT OF REMEDIAL ACTION COSTS

Section 75-10-733(3), MCA, states that the applicant shall reimburse DEQ for any remedial action costs the state incurs in the review and oversight of a VCP. This section of the VCP should include a statement that the applicant agrees to reimburse DEQ for these remedial action costs. DEQ tracks all facility-specific costs and may recover costs not associated with the VCP depending upon the VCRA applicant's status as a potentially liable person.

It is not possible to estimate the amount of DEQ's oversight costs. DEQ costs have ranged from $2,000 to $100,000 depending upon the number of VCP submittals required and the complexity of the facility and cleanup. "No further action" VCPs generally have lower oversight costs than VCPs requiring cleanup. DEQ will not issue a closure letter on a VCP until all billed costs associated with the VCP have been paid. If a facility requires long-term O&M, DEQ may issue a limited closure letter stating that all remedial activities included in the VCP have been completed and that DEQ only anticipates requiring those activities included in the O&M plan in the future. If all other remedial activities for the entire facility have been addressed, the facility will be placed in O&M status on the CECRA Priority List.

Section 75-10-721(7), MCA, states that DEQ may require financial assurance from a liable person in an amount that DEQ determines will ensure the long-term O&M of the remedial

actions at the facility. The liable person shall provide the financial assurance by any one method or combination of methods satisfactory to DEQ, including but not limited to insurance, guarantee, performance or other surety bond, letter of credit, qualification as a self-insurer, or other demonstration of financial capability. However, §75-10-736(12), MCA, states that DEQ may not require financial assurance for VCPs except as provided in 75-10-738(2)(b), MCA. Section 75-10-738, MCA, states that, if necessary, an applicant must provide for long-term funding for facility maintenance or monitoring. DEQ may require financial assurance for O&M. In determining whether financial assurance is required, DEQ will consider factors including but not limited to financial viability of the applicant, the length of the O&M period, and the extent of the O&M requirements.

3.5 PHASED CLEANUP

Section 75-10-733(4), MCA, indicates that DEQ may approve a VCP that provides for phases of remediation or that addresses only a portion of the facility. To the extent that the original environmental assessment required under § 75-10-734, MCA, addresses subsequent phases of remediation, the applicant may rely on that assessment when submitting VCPs for subsequent phases of remediation. This section of the VCP should state whether the VCP addresses the entire facility or only a portion of the facility. In addition, this section should reference any previous VCPs upon which the current VCP relies.

4.0 ENVIRONMENTAL ASSESSMENT

Section 75-10-734(2), MCA, indicates the information required for the environmental assessment portion of the VCP. This section of the VCP should include the requirements provided in § 75-10-734(2), MCA, and described in sections 4.2 through 4.10 of this guide. Section 75-10-734(1), MCA, requirements may be included here as well. "No further action" VCPs must include the same environmental assessment information that would be required if further remedial action was required.

4.1 LEGAL DESCRIPTION AND FACILITY MAP

Section 75-10-734(2)(a), MCA, requires that the VCP include the legal description of the facility and a map of the facility identifying the location and size of the facility and relevant features of the facility, such as property boundaries, surface topography, surface and subsurface structures, and utility lines. This section of the VCP must include comprehensive maps to scale as well as the other information required by the statute. Maps should also be provided which identify relevant features of areas contiguous to the facility. The following location information should be provided:

- County,
- distance to the nearest city or town,
- street address if the facility is in town,
- township, range, section, and ¼ ¼ ¼ of the section, and
- latitude and longitude.

4.2 PHYSICAL CHARACTERISTICS

Section 75-10-734(2)(b), MCA, requires that the VCP include the physical characteristics of the facility and areas contiguous to the facility, including the location of any surface water bodies and groundwater aquifers. To assist the applicant in completing this requirement, DEQ offers the following guidelines on what is appropriate to include in this section. A map to scale should be provided showing the following existing features of the facility and areas contiguous to the facility, where relevant, with an accompanying narrative providing additional description.

- topography,
- stratigraphy,
- structural geology,
- regional groundwater flow patterns,
- hydraulic conductivity,
- floodplain designation,
- climatological data, including wind speed and direction,
- all surface water bodies and wastewater discharge points,
- groundwater monitoring and supply wells,
- surface water intakes,
- aquatic and terrestrial habitats,
- sensitive environments (e.g., wetlands)
- physical features such as buildings or roads,
- facility process units and loading docks,
- chemical and/or fuel transfer, and pumping stations,
- railroad tracks and railcar loading areas,
- surface and stormwater run-off retention ponds and discharge points,
- building drainage or wastewater discharge points,
- spill collection sumps and/or drainage collection areas,
- wastewater treatment units,
- all underground and above ground storage tanks,
- underground and above ground piping,
- water cooling systems and/or refrigeration units,
- sewer lines,
- underground utility lines and buried cables,
- french drain systems,
- water recovery sumps and building foundations,
- surface impoundments,
- waste storage and/or disposal areas/pits, landfills etc.,
- chemical and/or product storage areas,
- septic leach fields (drainfields),
- irrigation ditches and/or irrigation systems,
- dry wells and/or waste disposal sumps, and
- a list of all the other impacted facilities (CECRA, federal Superfund, leaking underground storage tank, contaminated groundwater, hazardous waste, etc.) within one-quarter mile of the facility.

4.3 AREA WELLS

Section 75-10-734(2)(c), MCA, requires that the VCP include the location of any wells located on the facility or on areas within a one-half mile radius of the facility and a description of the use of those wells. Because CECRA defines "facility" as wherever contamination has come to be located, the applicant should identify wells within a one-half mile radius of any contamination regardless of property boundaries. Well information is required regardless of whether groundwater at the facility is impacted. This section of the VCP should include the following information for areas within a one-half mile radius of the facility. If any of this information is unavailable, an explanation should be provided in the VCP.

- A list of all wells within the one-half mile radius of the facility, including monitoring wells, from the Montana Bureau of Mines and Geology Groundwater Information Center (406-496-4336; http://mbmggwic.mtech.edu), the Department of Natural Resources and Conservation, and any other sources that identify the use, depth, geologic formation/aquifer and yield of those wells.
- To the extent practicable, a map to scale using geographic references showing the locations of these wells.
- Documentation of any efforts to verify the presence or absence of unregistered wells supplying groundwater for domestic use in older residential neighborhoods or in rural areas (i.e., door-to-door inspection). Note: This information is critical when there is a likelihood that groundwater contamination has or may affect drinking water wells that are not listed in readily available databases.
- To the extent practicable the following should also be provided: owner, address, map location, driller, date drilled, static water level, and well construction design (and lithologic logs, if available) showing screened interval, casing type and construction details (available from the Department of Natural Resources and Conservation) including: gravel pack interval, bentonite seal thickness and cemented interval. This information is particularly important for onsite wells.

4.4 GROUNDWATER AND SURFACE WATER USAGE

Section 75-10-734(2)(d), MCA, requires that the VCP include the current and reasonably anticipated future use of onsite ground and surface water. This section of the VCP should include sufficient detail about current and anticipated future groundwater and surface water usage to evaluate human health and environmental exposure. The determination of future groundwater and surface water usage should be based on the following:

- suitability of water for beneficial uses,
- historical land and water uses,
- anticipated future land and water uses,
- community and nearby property owners' concerns regarding future water use,
- regional and local development patterns,
- regional and local population projections, and
- availability of alternate water sources including, but not limited to, public water supplies, groundwater sources, and surface water sources.

This section should also include the specific conductivity of the groundwater and indicate the class of the groundwater as defined in ARM 17.30.1006. A general description of the suitable use of the class of groundwater should also be provided. The lowest specific conductivity for the groundwater at the facility corresponding to the highest quality is appropriate for classification of the groundwater. This may require determination of the specific conductivity of the groundwater upgradient from any contaminant sources.

Example

The following specific conductivities are available for monitoring wells at the facility:

800 µSiemens/cm	1050 µSiemens/cm
950 µSiemens/cm	1100 µSiemens/cm

The groundwater is Class I because the lowest specific conductivity is less than or equal to 1000 µSiemens/cm (ARM 17.30.1006(1)(a)).

In addition, this section should include the classification of any streams or rivers located on or near (within one-half mile) the facility and a general description of suitable use of the class of stream. ARM 17.30.606 through 17.30.629 provide information about stream classification. The Montana 303(d) List of impaired and threatened water bodies in need of water quality restoration should also be consulted to determine if any surface water bodies located on or near the facility are included. If any water bodies located on or near the facility are determined to be on the list, the VCP should include a description of any contribution the current condition of the facility has on or the proposed remediation of the facility will have on the total maximum daily load for the water body.

4.5 OPERATIONAL HISTORY OF THE FACILITY

Section 75-10-734(2)(e), MCA, requires that the VCP include the operational history of the facility, including ownership, and the current use of the facility, including any readily available aerial photographs from within the state of Montana. This section of the VCP should include the following:

- Readily available aerial photographs;
- A description of the activities or businesses that occupied the facility as far back as typical historical records and knowledge allows, including years of operation;
- A description of any historical records including county clerk and recorder and tax assessor records, Polk directories, and Sanborn fire insurance maps (copies of easily obtainable, relevant documents should be included in an appendix to the VCP);
- A description of all past operations that may have resulted in the release(s) of hazardous or deleterious substances at the facility;
- Diagrams of facility operations (e.g., railroad facility maps, permitted activity diagrams);
- The dates that the activities occurred and the dates during which the hazardous or deleterious substances may have been released into the environment;
- The approximate volumes of the materials released;
- A description of past and present waste disposal practices and areas;
- A list of any known hazardous or deleterious substances used at the facility, with volume estimates and a list of all wastes generated at the facility, including manifests of offsite disposal;
- References and information about the sources of the operational history;
- Information about the current use of the facility;
- Any current activities that may have resulted in a release;
- Current hazardous or deleterious substance usage; and
- Current waste disposal practices.

4.6 CURRENT AND FUTURE FACILITY USAGE

Section 75-10-734(2)(f), MCA, requires that the VCP include the current and reasonably anticipated future uses of the facility and immediately adjacent properties. "Reasonably anticipated future uses" is defined in § 75-10-701(18), MCA, as likely future land or resource uses that take into consideration: (a) local land and resource use regulations, ordinances, restrictions, or covenants; (b) historical and anticipated uses of the facility; (c) patterns of development in the immediate area; and (d) relevant indications of anticipated land use from the owner of the facility and local planning officials. This section of the VCP should include the current use of the facility and information about the anticipated future use of the facility and provide the source of information used to determine future use. Information that may be used to determine future use includes local zoning regulations, comprehensive plans, redevelopment plans, and consultation with local planners. The VCP must include enough information on current and projected uses of the facility and adjacent areas to determine whether the remediation proposal will be protective of those uses. In addition to identifying general uses (e.g. industrial, residential, commercial, recreational, etc.), this section should identify any relevant zoning, zoning restrictions, easements, restrictive covenants, equitable servitudes, and any other restrictions on the use of the facility and adjacent property. If future usage other than unrestricted residential is identified as part of the proposed remedy, institutional controls are required to ensure long-term protectiveness. Typically, DEQ requires restrictive covenants as institutional controls and an example is included as Attachment F.

4.7 FACILITY CHARACTERIZATION

Section 75-10-734(2)(g), MCA, requires that the VCP include information on the methods and results of investigations concerning the nature and extent of any releases or threatened releases of hazardous or deleterious substances that have occurred at the facility and a map showing general areas and concentrations of hazardous or deleterious substances. Section 75-10-734(2)(h), MCA, requires that the VCP include any sampling results or other data that characterizes the soil, air, groundwater, or surface water on the facility. This information may be combined and included in this section of the VCP. Sample results should be summarized in the text of the VCP and lab reports should be included as an appendix. Data previously submitted to DEQ may be summarized and referenced in the VCP. To assist the applicant in completing these requirements, DEQ offers the following guidelines on what to include in this discussion, as applicable:

- identification of the nature and extent, both onsite and offsite, of hazardous or deleterious substances that have been released into soil, air, groundwater and surface water at the facility;
- a map indicating all source areas, areas of contamination, or hazardous or deleterious substance treatment, storage or discharge areas;
- a description of the chemical nature, mobility and toxicity of the hazardous or deleterious substances, estimated volumes and concentrations of substances discharged at each area, discharge point, drain, or leakage point (if available);
- a map to scale showing groundwater elevation across the facility and the inferred direction and estimated rate of groundwater movement across the facility using a minimum of three measuring points and depicting high and low water seasonal variations;
- a discussion of all hydraulic tests performed at the facility or nearby to characterize the hydrogeologic properties of any aquifers onsite and in the area; and
- a discussion of how all environmental samples/data were collected, including
  - the rationale involved in sampling locations, parameters, and methodology;
  - a description of sampling locations and methodology and analytical methodology;
  - onsite well construction details (showing screened interval, casing type, gravel pack interval, bentonite seal thickness and cemented interval) and lithologic logs;
  - quality assurance/quality control measures associated with the sampling and analysis;
  - sampling frequency and locations; and
  - the rationale involved in choosing the analytical methods. These methods should be appropriate and sufficient to fully characterize the nature and extent of contamination. The applicant should use EPA-approved analytical methods with appropriate method detection limits. Detection limits must be low enough for comparison with appropriate screening levels or cleanup levels. The applicant should consult DEQ about the suitability of other analytical methods before using them.

4.8 HUMAN AND ENVIRONMENTAL EXPOSURE

Section 75-10-734(2)(i), MCA, requires that the VCP include a description of the human and environmental exposure to releases or threatened releases of hazardous or deleterious substances at the facility based upon the current use of the facility and adjacent properties and any reasonably anticipated future uses of the facility. This section of the VCP should describe the

types of people, plants, animals and components of the environment (e.g., the groundwater) that may potentially be exposed to contamination from the facility and how they may be exposed. DEQ also considers the reasonably anticipated future uses of adjacent properties in determining potential exposure. The applicant should start by providing a site conceptual exposure model (SCEM) for the current and reasonably anticipated future use of the facility that indicates the facility-specific contaminant sources (e.g., underground tanks, sewer lines, etc.), release mechanisms, transport routes and media, and potential receptors. An example of a SCEM is provided as Attachment B. This model is more extensive than that required for most VCRA facilities and may not include all exposure pathways but is meant to provide a reasonably comprehensive example. For instance, the breast milk exposure media is not evaluated at all facilities and is only important for facilities with bioconcentrating contaminants like dioxins and furans. This section of the VCP should also include a narrative discussion of the SCEM. More exposure information may be necessary if the remediation proposal involves cleanup to facility-specific cleanup goals rather than generic screening levels. Please refer to Section 5.2 for a discussion of appropriate screening and cleanup levels.

DEQ requires both a discussion of human exposure at the facility and a discussion of the potential exposure of ecological receptors to any contaminated media at the facility. The amount of discussion of ecological exposure required varies based on the type of facility. An operating commercial/industrial facility located in an urban area may only require a brief discussion indicating that the setting is not suitable habitat for long-term ecological exposure. In contrast, a more isolated facility, such as a closed mine located along a stream, may require a more extensive analysis.

DEQ also requires evaluation of the soil to groundwater pathway. Soil cleanup levels must be protective of groundwater. Contaminant concentrations in soil must not be significant enough to leach to groundwater and cause contamination above DEQ's Circular WQB-7 (WQB-7) human health standards, other risk-based concentrations for contaminants not listed in WQB-7, or federal maximum contaminant levels (MCLs), as appropriate. This section should include an analysis of the fate and transport scenario for this pathway at the facility and include an analysis of exposure to groundwater that may potentially become contaminated in the future.

4.9 REGULATORY AND COMPLIANCE HISTORY

Section 75-10-734(2)(j), MCA, requires that the VCP include readily available information on the environmental regulatory and compliance history of the facility, including all environmental permits. This section of the VCP should include the following and any other relevant regulatory history:

- a list of all local, state, and federal environmental permits obtained for the facility, including, for example:
  - Montana Pollutant Discharge Elimination System
  - Montana Ground Water Pollution Control System
  - underground storage tank removal
  - storage or disposal
  - asbestos abatement
  - pesticide applicator
  - stormwater discharge
  - solid waste disposal
  - hazardous waste treatment
  - air quality
  - mining
- information on permit violations, notices to take corrective action, or similar issues for each of these permits;
- a list of all facility-specific notifications made as a result of any management activities of hazardous substances conducted at the facility, including any and all U.S. Environmental Protection Agency (EPA) identification numbers obtained for management of hazardous substances at the facility from either the state or the EPA;
- a list of all notifications made to state and/or federal agencies reporting spills and/or accidental releases and any actions taken to address those spills/releases, including confirmation sample results;
- a description of any actions taken under CECRA at the facility (e.g., notice letters, proper and expeditious letters, or orders);
- a description of any private or agency litigation associated with the facility; and
- a description of any Controlled Allocation of Liability Act actions related to the facility.

5.0 REMEDIATION PROPOSAL

This section of the VCP should include the requirements of § 75-10-734(3), MCA, for the remediation proposal portion of the VCP. This section of VCRA states that a remediation proposal must include the information described in sections 5.1 through 5.9 of this guide.

5.1 PROPOSED CLEANUP PLAN

Section 75-10-734(3)(a), MCA, requires that the VCP include a detailed description of the components of the remediation proposal. This section of the VCP should include the details of the remediation proposal. The proposal must be described in sufficient detail to allow DEQ to evaluate whether or not the proposal is protective of public health, safety, and welfare and the environment. The proposal must also provide enough detail for DEQ to determine whether all environmental requirements will be met by the proposal. Maps identifying areas to be remediated and diagrams of the remedial design, with specifications as appropriate, are examples of the type of information needed to fulfill this requirement. DEQ must also be able to determine if the applicant will be capable of completing the VCP within the 60-month time requirement specified in § 75-10-736(5), MCA. These requirements are described in further detail in the following sections. "No further action" VCPs must include a statement that no further remedial action is required at the facility to meet the requirements specified in the following sections.

5.1.1 Waste Management

Many cleanup actions involve the treatment and/or disposal of wastes that are listed or characteristic wastes as defined in the Montana Hazardous Waste Act and the regulations

adopted pursuant to it. This section of the VCP should include a discussion of whether or not a hazardous waste will be generated by its implementation (e.g., through the excavation of contaminated material, which may have been discharged prior to 1980, but which would become a hazardous waste upon being excavated or managed), and the volume of this material. This section of the VCP should also include a description of how such hazardous waste will be managed in accordance with current state and federal hazardous waste regulations. If offsite disposal of either solid or hazardous waste will be part of the remediation proposal, specific information about the proposed disposal facility should be included in the VCP. If applicable, the VCP should describe the sampling program that will be used to verify that the material is not a hazardous waste or that treatment of the contaminated media has resulted in a non-hazardous waste.

5.1.2 Reclamation

Most remediation proposals must include a reclamation plan including revegetation. DEQ requires that the revegetation meet the requirements of all reclamation environmental requirements, criteria, or limitations (ERCLs) relevant to the proposed action (described in greater detail in Section 5.3.1.2 and appendix D). The following information should be provided in this section of the VCP.

- recontouring/grading, including final slope and aspect, drainageway reconstruction, and erosion control methods
- coversoiling/topsoiling, including soil source, soil texture, percent rock fragments, and percent organic matter
- seedbed preparation, including depth of tilling and equipment to be used
- amendment application, including fertilizer, mulch, or other amendment application rates
- seeding/planting, including seed mixes, seed sources, seeding rates, seeding techniques, seeding times, and transplants
- reference area delineation or description of vegetation typical of the surrounding area (see below)
- monitoring, including monitoring and reporting frequency, and sampling methods

Descriptions of reference areas or of vegetation typical of the surrounding area and vegetation monitoring reports must provide adequate information for DEQ to be able to assess vegetation success according to the following criteria.

- percent vegetation cover by species (current year's growth, including noxious weeds)
- percent total vegetative cover (current year's growth, not including noxious weeds)
- percent litter (litter plus rock over 2 inches in diameter)
- percent bare ground
- herbaceous production
- shrub density (if applicable)
- list of species (observed anywhere within the seeded area)

5.2 SCREENING AND CLEANUP LEVELS

Section 75-10-734(3)(a)(i), MCA, requires that the remediation proposal portion of the VCP include the proposed cleanup levels for the facility. The proposed cleanup levels must be protective of public health, safety, and welfare, and the environment based on the current and reasonably anticipated future uses of the facility. The attainment of cleanup levels must be demonstrated by the comparison of contaminant concentrations in representative confirmation samples collected from environmental media of concern to appropriate cleanup levels. Evaluation of representative samples should be conducted through the application of statistical tests specified in the VCP. It is critical that confirmation samples be analyzed using methods with detection limits adequate to determine whether cleanup levels have been met.

5.2.1 Screening Levels

Before developing cleanup levels for the facility, contaminant concentrations should be screened to determine the contaminants of potential concern (COPCs) for the facility. Surface water and groundwater concentrations may not exceed the standards provided in WQB-7 (DEQ 2001, verify status for most current version) (short version available via http://www.deq.state.mt.us/wqinfo/Circulars/WQB-7.PDF). For surface water, both aquatic life and human health standards must be evaluated. Sediment concentrations may be compared to Washington State Department of Ecology Freshwater Sediment Quality Values (WA 1997) or Department of Energy Preliminary Remediation Goals for Ecological Endpoints (DOE 1995 and 1997). Air concentrations may be compared to ambient air PRGs provided by EPA Region IX (EPA 2000b, verify status for most current version) (available via http://www.epa.gov/region09/waste/sfund/prg/). "No further action" VCPs must include a demonstration that the current condition of the facility meets all appropriate cleanup levels and that no further remedial action is necessary to achieve cleanup goals. Attachment C is a flowchart that DEQ uses to determine COPCs for soil. The following is a description of the process.

1. Determine whether the contaminant is a petroleum compound for which there is a Montana Risk-Based Corrective Action (RBCA) risk-based screening level (RBSL) (DEQ 2002). These RBSLs are based on both direct contact with contaminated soil and leaching to groundwater. RBSLs are also based on either residential, industrial, or construction/excavation exposure and various depths to groundwater and take into account multiple pathways and cumulative exposure. Compare the contaminant concentration from the facility directly to the appropriate RBSL. The total petroleum concentrations may not exceed the ceiling concentration. If the compound concentration exceeds the RBSL or ceiling, it is a COPC for the facility and requires further evaluation.

2a. If the contaminant is not a compound with an RBSL, determine whether it is a contaminant for which there is an EPA Soil Screening Level (SSL) (EPA 1996) for the soil to groundwater pathway. These SSLs are based entirely on leaching from the soil to the groundwater. DEQ has determined that the application of a dilution attenuation factor (DAF) of 10 is appropriate for conditions in Montana. The SSL for a 10 DAF is calculated by multiplying the SSL for a DAF of 1 by 10. Compare the contaminant concentration from the facility to the 10 DAF SSL. If the compound concentration exceeds the SSL, it is a COPC for the leaching pathway at the facility and requires further evaluation.

2b. In addition to determining if the contaminant is a COPC for the leaching pathway, the contaminant concentration must also be compared to the EPA Region IX Preliminary Remediation Goals (PRGs) (EPA 2000b verify status for most current version) to determine if it is a COPC for direct contact. These PRGs are based on ingestion, inhalation, and dermal contact and include residential and industrial exposure. Surface soil concentrations may be compared to either residential or industrial PRGs depending on the current and reasonably anticipated future use of the facility. Subsurface soil concentrations are conservatively compared to PRGs for industrial exposure for screening purposes. Compare carcinogenic compound concentrations directly to the carcinogenic PRG as these PRGs are based on a $1x10^{-6}$ risk. This ensures that cumulative carcinogenic risks at facilities do not exceed $1x10^{-5}$, the cumulative risk level DEQ allows. Non-carcinogenic compound PRGs must be divided by 10 before comparison to contaminant concentrations from the facility to account for potential cumulative effects. This ensures that the cumulative non-carcinogenic hazards do not exceed one and are, therefore, not expected to cause adverse health effects. The PRG for lead is not divided by 10 since lead effects are considered separately from overall non-carcinogenic effects. If the compound concentration exceeds the carcinogenic PRG or one tenth of the non-carcinogenic PRG, it is a COPC for direct contact at the facility and requires further evaluation.

5.2.2 Cleanup Levels

Once the COPCs for the facility have been determined, cleanup levels derived via one of the following four methods or a combination of methods are typically approved by DEQ. Whatever method is used, the rationale for selecting the proposed cleanup level must be detailed in the VCP.

1) Background cleanup levels: DEQ accepts attainment of facility-specific background levels based on samples collected from unimpacted areas representative of conditions at the facility for compounds such as metals. Established literature values for background concentrations may be also be proposed. In some cases, background concentrations may exceed screening levels and may, therefore, be used in place of screening levels. However, background concentrations that exceed ERCLs may necessitate that a facility remain on the CECRA Priority List regardless of the status of a VCP.

2) Established generic screening levels: The screening levels described in the box above may be appropriate as cleanup levels. For appropriate current and proposed facility-specific recreational use at remote mining facilities, DEQ may accept the cleanup levels established by DEQ's Risk-Based Cleanup Guidelines for Abandoned Mine Sites (DEQ 1996). However, the recreational use must match that provided in Risk-Based Cleanup Guidelines document and transport of contaminants from soil to groundwater must be evaluated.

3) Previously approved cleanup levels: DEQ will consider, on a case-by-case basis, cleanup levels it has approved at other similar facilities that were determined based on the same current and proposed exposure scenarios as the subject facility.

4) Facility-specific risk-based cleanup levels: The applicant can propose cleanup levels based on a facility-specific risk analysis conducted using standard EPA human health risk assessment guidance (EPA 1999, 1998a, 1997b, 1992, 1991a-c, and 1989) and/or, as applicable, standard EPA ecological risk assessment guidance (EPA 2000a, 1998b, and 1997a). For human health DEQ allows cleanup levels calculated based on cumulative risk levels less than or equal to a total excess cancer risk of $1x10^{-5}$ for carcinogens or a total hazard index less than or equal to 1 for non-carcinogens. Ecological risks must also be evaluated and acceptable risk determinations are made on a facility-specific basis. All exposure assumptions must be acceptable to DEQ and are best determined in consultation with DEQ.

5.3 CLEANUP REQUIREMENTS

Section 75-10-734(3)(a)(ii), MCA, requires that the remediation proposal section of the VCP include the manner in which the remediation plan satisfies the cleanup requirements of § 75-10-721, MCA. This section of the VCP must identify each of the seven requirements and provide information about how the remediation proposal satisfies them. Some of the requirements are repeated within § 75-10-734, MCA. The seven criteria included in § 75-10-721(1) and (2), MCA, are: that the remedy assures protection of public health, safety, and welfare and of the environment; that the remedy is consistent with ERCLs; that DEQ shall select remedial actions, considering present and reasonably anticipated future uses, giving due consideration to institutional controls, that demonstrate acceptable mitigation of exposure to risks to the public health, safety, and welfare and the environment; are effective and reliable in the short and long term; are technically practicable and implementable; use treatment technologies or resource recovery technologies if practicable giving due consideration to engineering controls; and are cost-effective. The following sections describe each criteria in detail. "No further action" VCPs must include a demonstration that no further remedial action is required to meet the cleanup requirements specified in § 75-10-721, MCA.

Section 75-10-721(3), MCA, requires that in selecting remedial actions, DEQ shall consider the acceptability of the actions to the affected community, as indicated by community members and the local government. This requirement is met by the public participation requirements included in § 75-10-735, MCA, that will be discussed in Section 7.0.

5.3.1 Evaluation Criteria

The VCP must include an evaluation of whether the proposed remedy meets the seven criteria included in § 75-10-721(2)(b) and (c), MCA.

5.3.1.1 Protectiveness

Section 75-10-721(1), MCA, requires that a voluntary cleanup under §§ 75-10-730 through 75-10-738, MCA, attain a degree of cleanup of the hazardous or deleterious substance and control of a threatened release or further release of that substance that assures protection of public health, safety, and welfare and of the environment. This section of the VCP should describe how the remediation proposal renders the facility protective for current and reasonably anticipated future uses. For instance, the remedy may include soil removal to cleanup levels, described in section 5.2, that are protective of both the groundwater and future residential users based on a facility-specific risk analysis. Another remedy might include an onsite repository that provides both a liner as a barrier between soil and groundwater and a cap to prevent direct exposure to contaminated soil. Thus, the repository is protective of the groundwater and current and future onsite recreational users. "No further action" VCPs must include evidence that further action is not required to assure the facility is protective.

5.3.1.2 Environmental Requirements, Criteria, or Limitations

Sections 75-10-721(2)(a) and (b), MCA, require that in approving or carrying out remedial actions performed under this part, DEQ, except as provided in subsection (4), shall require cleanup consistent with applicable state or federal ERCLs and may consider substantive state or federal ERCLs that are relevant to the facility conditions. This section of the VCP should include a description of both applicable and relevant state and federal ERCLs. Applicable requirements apply at a facility regardless of whether the proposed remedy is being conducted under VCRA. Relevant requirements are those that are not applicable, but address situations or problems sufficiently similar to those at the facility and therefore, are relevant for use at the facility. Section 75-10-721(b), MCA, states that DEQ may consider relevant requirements in approving cleanups. DEQ considers relevant ERCLs on a case-by-case basis considering facility-specific information. Relevant ERCLs identified in the approved VCP must be attained. Some ERCLs may change from relevant to applicable if the proposed remedy changes.

ERCLs are generally of three types: action-specific, contaminant-specific, and location-specific. Action-specific requirements are those that are triggered by the performance of a certain activity as part of a particular remedy. They do not in themselves determine the remedy but rather indicate the manner in which the remedy must be implemented. For example, hazardous waste disposal requirements include specifications for the manner in which land disposal units are constructed but these requirements are not triggered unless a land disposal unit is proposed. Contaminant-specific requirements are those that establish an allowable level or concentration of a hazardous or deleterious substance in the environment or which prescribe a level or method of

treatment for a hazardous or deleterious substance. Examples include promulgated state standards establishing acceptable concentrations of constituents present at the facility in air, surface water, or groundwater. Location-specific requirements are those that serve as restrictions on the concentration of a hazardous or deleterious substance or the conduct of activities solely because the facility is in a specific location or the action affects specified types of areas. Location-specific requirements relate to facilities with potential historical, cultural, or ecological significance, or facilities located near wetlands, floodplains, surface water, endangered species habitat, and migratory bird habitat. DEQ has prepared these analyses for various facilities and the applicant is encouraged to obtain relevant examples from DEQ to assist in the applicant's analysis of applicable laws and regulations. The ERCLs analysis must include information about **how** the remediation proposal complies with each ERCL. A sample ERCLs analysis is included as Attachment D.

"No further action" VCPs must also include a complete ERCLs analysis. Action-specific ERCLs are included in "no further action" VCPs in order to evaluate alternatives involving remedial actions. This section of the "no further action" VCP must demonstrate **how** no further action complies with all of the ERCLs. When evaluating whether the "no further action" alternative meets action-specific ERCLs, the VCP should include a statement that the alternative complies with these ERCLs since no action is proposed or required.

Although § 75-10-721(4), MCA, allows DEQ to select a remedial action that does not meet an applicable state ERCL under any one of the several circumstances, DEQ requires actions under VCRA to meet all ERCLs. In addition, § 75-10-721(6), MCA, allows DEQ to exempt any portion of a remedial action that is conducted entirely onsite from a state or local permit that would, in the absence of the remedial action, be required if the remedial action is carried out in accordance with the standards established under this section and this part. However, DEQ requires all permits for voluntary cleanups. DEQ only considers waiving ERCLs or exempting permit requirements for remedial actions over which it has a greater amount of oversight than voluntary cleanup actions (e.g., facilities under order). In addition, the need to waive ERCLs implies complexities and conditions not appropriate to address under VCRA. Section 75-10-734(f), MCA, supports this requirement, as it requires the identification of any permits necessary to conduct the proposed remedial action.

5.3.1.3 Mitigation of Risk

Section 75-10-721(2)(c)(i), MCA, requires DEQ to select remedial actions, considering present and reasonably anticipated future uses, that demonstrate acceptable mitigation of exposure to risks to the public health, safety, and welfare and the environment. In addition, § 75-10-734(a)(iv), MCA, requires a demonstration that exposures to risk affecting the public health, safety, and welfare and the environment at the facility will be substantially mitigated by the plan. This section of the VCP should include a description of how the proposed remedy mitigates the risks presented at the facility. Mitigation of risks can be shown by describing how the remedy reduces the levels of contaminants to which humans and ecological receptors will be exposed. Risks to components of the environment, like the groundwater, must also be mitigated. This requirement can be addressed by describing how the proposed cleanup levels and/or standards identified in Section 5.2 will be achieved and stating that these cleanup levels represent risks that are allowable by DEQ. Alternatively, risks may be mitigated with remedies that block the

pathways by which exposure may occur via the installation of caps, liners or onsite repositories. "No further action" VCPs must include a demonstration that risks at the facility are less than or equal to those allowed by DEQ and therefore no action is required to mitigate them.

5.3.1.4 Effective and Reliable

Section 75-10-721(2)(c)(ii), MCA, requires DEQ to select remedial actions, considering present and reasonably anticipated future uses, that are effective and reliable in the short term and the long term. This section of the VCP should include a demonstration that the proposed remedy is effective and reliable in the short term because it will not result in a further release of contamination or an increase in the risks posed by the facility to unacceptable levels during the cleanup. Short-term adverse effects may include air emissions or mobilization of contaminants into the groundwater or surface water via runoff. This section of the VCP should also demonstrate that the remedy is effective and reliable in the long term because it includes measures to ensure that a release will not occur in the future and that acceptable risk levels will be maintained on a long-term basis. Assuring long-term effectiveness may require remedial actions such as the implementation of institutional controls (e.g., restrictive covenants) or repository maintenance. "No further action" VCPs must include a demonstration that taking no further remedial action is effective and reliable in the short and long term. This may require assurance that facility usage will not change and that controls are in place to guarantee this.

5.3.1.5 Practicable and Implementable

Section 75-10-721(2)(c)(iii), MCA, requires DEQ to select remedial actions, considering present and reasonably anticipated future uses, that are technically practicable and implementable. This section of the VCP should include a demonstration that the proposed remedy may be implemented. Remedies that include impracticable components may not be selected. For example, reprocessing of tailings material may not be practicable because there may be no methods currently available to extract reasonable quantities of metals from the material. A soil vapor extraction system may be a proven effective remedial technology for solvents in certain types of soil and installation of a system is achievable. "No further action" VCPs should include a statement that no further remedial action is practicable and implementable because there are no impediments to taking no further action.

5.3.1.6 Treatment or Resource Recovery Technologies

Section 75-10-721(2)(c)(iv), MCA, requires DEQ to select remedial actions, considering present and reasonably anticipated future uses, that use treatment technologies or resource recovery technologies if practicable, giving due consideration engineering controls. This section of the VCP should include a discussion of whether the proposed remedy employs treatment technologies, resource recovery technologies, or engineering controls. An example of a remedy employing resource recovery technologies is the use of petroleum-contaminated soils in asphalt production. An example of treatment technologies would be stabilization of lead-contaminated soil to remove a toxicity characteristic or soil vapor extraction to remove volatile organic compounds from soil. These remedies may be preferable to excavation and land disposal. A proposed remedy may not meet this criteria and still be chosen as the preferred alternative if it meets all the other selection criteria. DEQ interprets the statute as referring to long-term engineering controls on- or offsite, not engineering controls employed only during remediation,

such as dust control. An example of an engineering control that DEQ might consider an appropriate remedy would be an onsite repository. "No further action" VCPs should include a statement that treatment technologies, resource recovery technologies, or engineering controls are not necessary because no further remedial action is required to meet the other cleanup requirements.

5.3.1.7 Cost-Effectiveness

Section 75-10-721(2)(c)(v), MCA, requires DEQ to select remedial actions, considering present and reasonably anticipated future uses, that are cost-effective. Section 75-10-721(5), MCA, states that cost-effectiveness must be determined through an analysis of incremental costs and incremental risk reduction and other benefits of alternatives considered, taking into account the total anticipated short-term and long-term costs of remedial action alternatives considered, including the total anticipated cost of O&M activities. This section of the VCP should include a demonstration that the proposed remedy is cost-effective for the amount of risk reduction achieved. Actual estimated costs should be provided. Regardless of the cost differences, to be selected, the remedy must compare favorably to other remedies based on the other six criteria. "No further action" VCPs should include a statement that no further remedial action is cost-effective given that there is no cost and no risk reduction is necessary to meet the other cleanup requirements.

5.4 SAMPLING OR TREATABILITY STUDIES

Section 75-10-734(3)(a)(iii), MCA, requires that the remediation proposal portion of the VCP include identification of sampling or treatability studies. This section of the VCP should include a description of any sampling or treatability studies required before or during the implementation of the VCP. For example, if an appropriate stabilization mixture must be developed prior to implementation, a description of the treatability studies associated with its development should be included here. It is advisable that the applicant conduct the majority of the sampling and treatability studies necessary for the remedy prior to submittal of the VCP, to ensure that adequate information is available to indicate that the remedy is appropriate. This section of the VCP should also include a description of the confirmation sampling that will be conducted following the cleanup to verify that cleanup levels have been met as described in Section 5.2. Typically, sampling is needed to verify attainment of cleanup levels. Details on this necessary sampling should include sample collection methods, location, frequency, analytical parameters, and quality assurance/quality control procedures. "No further action" VCPs should include a statement that previous investigations have indicated that further sampling or treatability studies are not necessary.

5.5 REMEDIAL ALTERNATIVES COMPARISON

Section 75-10-734(3)(b), MCA, requires a brief comparison of the remediation proposal to reasonable alternatives based on the remedy selection criteria specified in § 75-10-721, MCA. This section of the VCP should include text and a summary table providing a comparison of the proposed remedy to other reasonable alternatives based on the seven criteria included in § 75-10-721, MCA, and described in Section 5.3. This section is meant to provide a truncated feasibility study type analysis. The text should provide a brief description of the alternative and discussion regarding how it would or would not meet each of the seven criteria. The table provides a

concise summary of the comparison. Attachment E provides an example of a comparison of alternatives including a summary table. The following is a summary of the type of information that should be included for each alternative.

Criteria	Evaluation of Criteria Relative to Alternative
Protectiveness	Whether the alternative is protective of public health, safety, and welfare and the environment.
Compliance with ERCLs	Whether the alternative complies with all ERCLs.
Mitigation of exposure to risk	Whether the alternative mitigates exposure to risk to public health, safety, and welfare and the environment.
Effectiveness and reliability	Whether the alternative is effective and reliable in the short term. Whether the alternative is effective and reliable in the long term.
Practicability and implementability	Whether the alternative can be implemented and the ease or difficulty with which it may be implemented.
Use of treatment or resource recovery technologies	Whether the alternative employs these types of technologies with due consideration of engineering controls.
Cost-effectiveness	Provide alternative costs and discuss the level of risk reduction achieved by this expenditure of money.

"No further action" VCPs must also include an alternatives analysis; however, this analysis is typically more brief than that necessary for VCPs requiring further remedial action. The no action alternative is evaluated against all seven of the criteria and may be compared to capping, complete removal, or some other alternative. Typically "no further action" VCPs are submitted for facilities with residual contaminant levels that are below acceptable cleanup levels. Thus, alternatives may be evaluated that address the residual contamination but can be shown to be no better at protection, compliance with ERCLs, mitigation of risk, and effectiveness and reliability than the no action alternative. These alternatives are also typically less practicable and implementable and cost-effective than the no action alternative and they may or may not use treatment, resource recovery technologies or engineering controls. Facilities meeting facility-specific cleanup levels require a brief alternatives analysis to balance the need for remediation with the risk analysis.

5.6 PROJECT SCHEDULE

Section 75-10-734(3)(c), MCA, requires a timetable for implementing the proposal and for any necessary monitoring of the facility after the proposed measures are completed. Rather than specifying the dates, the timetable should provide relative timeframes. As stated in § 75-10-736(7), MCA, voluntary cleanups must be initiated within 12 months of approval of the VCP and completed in 60 months or less, excluding O&M, or DEQ's approval lapses. DEQ may grant an extension of the time limit for completion under special circumstances.

DEQ Review

Section 75-10-736, MCA, outlines the VCP review process and time limits. Section 75-10-736, MCA, states that DEQ shall review VCPs for completeness, including adequacy and accuracy, and shall provide a written completeness notice to the applicant within 30 days after receipt of an application for a plan that would take 24 months or less to complete and within 60 days for a

plan that would take more than 24 months to complete. The completeness notice must note all deficiencies identified in the information submitted. To date, no VCP has been determined complete upon initial submittal. DEQ suggests that applicants plan for at least two submittals with mandated review periods. Section 75-10-736(4), MCA, states that consistent with the provisions of § 75-10-707, MCA, DEQ may access the facility during review of the application and implementation of the VCP to confirm information provided by the applicant and verify that the cleanup is being conducted consistent with the approved VCP.

Public Comment

Section 75-10-735, MCA, outlines the public participation requirements of VCRA. As stated in §§ 75-10-735(1) and (2), MCA, upon determination by DEQ that an application for a VCP is complete, DEQ shall publish notice and a brief summary of the VCP in a daily newspaper of general circulation in the area affected and make the VCP available to the public. The notice must provide 30 days for submission of written comments to DEQ regarding the plan. Upon written request by 10 or more persons, by a group composed of 10 or more members, or by a local governing body of a city, town, or county within the comment period, DEQ shall conduct a public meeting at or near the facility regarding the proposed VCP. The meeting must be held within 45 days of DEQ's completeness determination. Section 75-10-735(3), MCA, requires DEQ to consider and respond to relevant written or verbal comments submitted during the comment period or at the public meeting. DEQ may also request that local city/county health departments review VCPs before DEQ deems them complete to address any concerns of the local community.

VCP Approval

Following the public comment period, DEQ may require changes to the VCP based on the comments received. As stated in § 75-10-736(2), MCA, DEQ has 60 days to provide formal written notification that the VCP has been approved or disapproved for a VCP that would take 24 months or less to complete and 75 days for a VCP that would take more than 24 months to complete after DEQ's determination that an application is complete, unless the applicant and DEQ agree to an extension of the review to a date certain. As stated in § 75-10-736(5), MCA, DEQ shall approve a VCP if it meets the requirements specified in § 75-10-734, MCA, and will attain a degree of cleanup and control of hazardous or deleterious substances that complies with the requirements of § 75-10-721, MCA. Except for the period necessary for the O&M of the approved remediation proposal, DEQ may not approve a VCP that would take longer than 60 months after DEQ approval to complete. DEQ typically approves of VCPs that meet these requirements as soon as possible following the public comment period. Once DEQ approves of the VCP, § 75-10-735, MCA, requires DEQ to publish notice of its decision to approve the VCP and the reasons for any significant modification of the final VCP in a daily newspaper of general circulation in the area affected and make the final VCP available to the public. Section 75-10-736(6), MCA, provides that if DEQ does not approve a VCP, DEQ shall promptly provide the applicant with a written statement of the reasons for denial. The denial may be appealed to the board of environmental review in accordance with the provisions of § 75-10-732(4), MCA, or the VCP may be revised to address the reasons for its denial and resubmitted.

VCP Modification

Section 75-10-736(8), MCA, provides for modification of VCPs. This section states that if reasonably unforeseeable conditions are discovered during implementation of a VCP that substantially affect the risk to public health, safety, or welfare or the environment or substantially change the scope of the approved plan, the applicant shall promptly notify DEQ. DEQ may require the applicant to submit an amendment to the approved VCP to address the unforeseen conditions or may determine that a VCP is no longer appropriate. Sections 75-10-736(10)(a) and (b), MCA, state that failure of the applicant or the applicant's agents to materially comply with the VCP approved by DEQ renders the approval void. Submission of materially misleading information by the applicant or the applicant's agents in the application or during implementation of the VCP renders DEQ's approval void. Examples of conditions requiring VCP modification include, but are not limited to, the discovery of additional contaminated media; the discovery of additional contaminated areas; the discovery of a much greater volume of contaminated material than anticipated; a change in the remedy or offsite disposal facility; or a change in the anticipated facility usage.

VCP Closure

As indicated in § 75-10-736(11), MCA, within 60 days after completion of the approved VCP, the applicant shall provide to DEQ a certification from a qualified environmental professional that the VCP has been fully implemented (including initiation of any required O&M), including all documentation necessary to demonstrate the successful implementation of the plan, such as confirmation sampling, if necessary. This documentation should be provided in the form of a construction completion report including construction diagrams, disposal manifests, sampling results, and any other documentation necessary for DEQ to determine if the VCP has been fully implemented. Sections 75-10-738(1) and (2), MCA, indicate that after completion of the VCP, an applicant may petition DEQ for closure of the facility. Within 60 days of receipt of a petition for closure, weather permitting, DEQ shall conduct a review to determine that the releases or threatened releases addressed in the VCP do not pose a significant threat to public health, welfare, or safety or to the environment as determined in accordance with § 75-10-721, MCA, and that the applicant has:

(a) implemented all appropriate remedial actions;
(b) if necessary, provided for long-term funding for facility maintenance or monitoring; and
(c) reimbursed DEQ for all remedial action costs of the voluntary cleanup.

"No further action" VCPs should include language requesting closure of the facility or portion of the facility addressed in the VCP following approval of the VCP. The following is suggested language for inclusion in the VCP:

> "As the VCP indicates that no further action is required for the [Facility Name or Portion of the Facility Name] to assure present and long-term protection of public health, safety and welfare and the environment, [Applicant] hereby petitions for closure and delisting of the facility. All remedial action costs billed by DEQ to date have been paid, and [Applicant] will pay any outstanding bills sent by DEQ."

As indicated in § 75-10-738(3), MCA, in the event that the petition for closure is not approved by DEQ, it shall promptly provide the applicant with a written statement of the reasons for denial. This section of VCRA also states that written notification that the petition is approved by DEQ must include the following language:

> "Based upon the information provided by [insert name(s) of applicant(s)] concerning property located at [insert address], it is the opinion of the Montana Department of Environmental Quality that upon completion of the voluntary cleanup plan, no further action is required to ensure that this facility, when used for [insert purposes identified], is protective of existing and proposed uses and does not pose a significant risk to public health, safety, or welfare or the environment at the facility with regard to releases or threatened releases addressed in the voluntary cleanup plan. The department reserves the right to conduct or require further remedial action at this facility if a new release occurs or if the department receives new or different information than presented in the approved voluntary cleanup plan."

Section 75-10-738(4), MCA, indicates that after completion of a portion of a facility addressed in the VCP, DEQ shall issue a letter of completion notice to the applicant if DEQ determines that the applicant has satisfied the requirements of § 75-10-738(2), MCA. If the entire facility is addressed in the VCP, the petition for closure may also include a petition for delisting of facilities that are included on the CECRA Priority List. If appropriate, DEQ will initiate the delisting process described in ARM 17.55.114 upon issuing a closure letter for the facility.

Operation and Maintenance

For VCPs that include an O&M period, an O&M plan should be submitted with the VCP. The O&M plan should describe the O&M activities that will be performed to ensure that cleanup action objectives will not be compromised. The O&M plan may also include a sampling program that may be used to monitor the effectiveness of the remedy. As stated previously, DEQ may require financial assurance for O&M. In determining whether financial assurance is required DEQ will consider factors including but not limited to financial viability of the applicant, the length of the O&M period, and the extent of the O&M requirements. Closure letters for facilities requiring O&M will be limited and include language related to the O&M and continued payment of DEQ costs related to the O&M. For facilities where all remedial activities except O&M activities are complete, the facility will be placed in O&M status on the CECRA Priority List.

5.7 HEALTH AND SAFETY

Section 75-10-734(d), MCA, requires that the VCP include a statement that applicable health and safety regulations will be met during implementation of the remediation proposal. DEQ requires only that this commitment be included without any further information. DEQ does not review or approve health and safety plans. However, DEQ may request copies of facility-specific health and safety plans prior to conducting oversight of field activities to ensure the health and safety of DEQ staff.

5.8 MINIMIZATION OF SHORT-TERM DISTURBANCES

Section 75-10-734(e), MCA, requires that the VCP include a description of how short-term disturbances during implementation of the remediation proposal will be minimized. An example is how dust or stormwater runoff will be controlled during construction activities.

5.9 REQUIRED PERMITS

Section 75-10-734(f), MCA, requires that the VCP include identification of any permits necessary to conduct the proposed remedies. Any federal, state and/or local permits that may be required must be obtained before the plan can be implemented. Some permits that may be required include EPA Form 8700-12, Notification of Hazardous Waste Activity, State of Montana construction stormwater discharge permit, State of Montana Floodplain Development Permit, U.S. Army Corps of Engineers 404 permit, State of Montana 312 Permit, and County Conservation District 310 Permit. The Montana Environmental Quality Council publishes the Montana Index of Environmental Permits. In addition, for remedies impacting streams, the Montana Association of Conservation Districts publishes a Guide to Stream Permitting in Montana. These guides should be consulted to determine which permits may be required for the proposed remedy. The proposed remedy should comply will all federal, state, and local regulations regarding health and safety and remediation. The VCP should identify any applicable local regulations. Copies of all required permits must be provided to DEQ at the initiation of the cleanup. As explained previously, all permits must be obtained for voluntary cleanups.

6.0 REFERENCES

This section of the VCP should include a list of the references cited in the VCP. The following are references cited in this guide.

DEQ 2002. Final Draft Guidance Document Tier 1 Risk-Based Corrective Action, August 2002.

DEQ 2001. Circular WQB-7, Montana Numeric Water Quality Standards [ARM 16.20.603 (30)], December 2001.

DEQ 1996. Abandoned Mine Reclamation Bureau Risk-Based Cleanup Guidelines for Abandoned Mine Sites, February 1996.

DOE 1997. A Framework for Assessing Ecological Risks of Petroleum-Derived Materials in Soil, May 1997.

DOE 1995. Guide for Performing Screening Ecological Risk Assessments at DOE Facilities, September 1995.

EPA 2000a. Draft Ecological Soil Screening Level Guidance, July 2000.

EPA 2000b. EPA Region IX Preliminary Remediation Goals, November 2000.

EPA 1999. Supplemental Guidance to Risk Assessment Guidance for Superfund (RAGS), Volume I, Human Health Evaluation Manual: Dermal Risk Assessment Interim Guidance, March 1999.

EPA 1998a. RAGS, Volume 1, Human Health Evaluation Manual Part D, Standardized Planning, Reporting, and Review of Superfund Risk Assessments: EPA/540-R-97-033, January 1998.

EPA 1998b. Guidelines for Ecological Risk Assessment: EPA/630/R-95/002F, April 1998.

EPA 1997a. Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments, June 1997.

EPA 1997b. Exposure Factors Handbook, Volumes I-III, EPA/600/P-95/002Fa-c, August 1997.

EPA 1996. Soil Screening Guidance, EPA/540/R-94/101, April 1996. Note: Accompanying documents include Soil Screening Guidance: Technical Background Document: EPA/540/R-95/128 and Soil Screening Guidance: User's Guide, EPA/540/R-96/018.

EPA 1992. Supplemental Guidance to RAGS: Calculating the Concentration Term, Publication 9285.7-081, May 1992.

EPA 1991a. Supplemental Guidance to RAGS: Default Exposure Factors, March 1991, OSWER Directive 9285.6-03.

EPA 1991b. RAGS, Volume I, Human Health Evaluation Manual Part B, Development of Risk-based Preliminary Remediation Goals: EPA 540/R-92/003, December 1991.

EPA 1991c. RAGS, Volume I, Human Health Evaluation Manual Part C, Risk Evaluation of Remedial Alternatives: EPA/540/R-92/004, December 1991.

EPA 1989. RAGS, Volume I, Human Health Evaluation Manual Part A: EPA/540/1-89/002, December 1989.

WA 1997. Washington State Department of Ecology’s Creation and Analysis of Freshwater Sediment Quality Values in Washington State, July 1997.